

WHAT IS CLAIMED IS:

Subai> 1. A disc storage medium storing, in a predetermined region, file management data inclusive of position data of a program management file that manages the stream of a plurality of contents stored in a compression-encoded form by using a variable-length code, wherein as said file management data, there are stored position data of an intraframe encoding video and the number of blocks of the intraframe encoding video in a unit of a predetermined processing including a plurality of frames.

2. A disc storage medium according to claim 1, wherein said contents are compressed and encoded in compliance with MPEG2, said unit of the predetermined processing including the plurality of frames is the unit of GOP (group of pictures), and said intraframe encoding video is an I-Picture (intra-coded picture).

3. A disc storage medium according to claim 1, wherein said file management data include a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file storing the video and/or audio data is to be erased or combined and when there exists another program management file making reference to said data file, the erasure or the combination is inhibited unless said another program management file is operated first.

4. A disc storage medium according to claim 1, wherein said file management data include a last play file representing the position of the video or audio data file of which the access has ended last for each of the stored contents.

5. A disc storage medium according to claim 1, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

6. A disc storage medium according to claim 3, wherein said file management data include a last play file representing the position of the video or

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audio data file of which the access has ended last for each of the stored contents.

7. A disc storage medium according to claim 3, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

8. A disc storage medium according to claim 6, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

9. A disc storage medium storing video and/or audio data as a data file compression-encoded by using a variable-length code; wherein

the file of video and/or audio data stored in the disc storage medium is constituted by a data file storing the stream of compression-encoded video and/or audio data in a unit of a block, and a map file that includes address data for managing the data file; and

the map file includes position data of an intraframe encoding video and the number of blocks of the intraframe encoding video in a unit of a predetermined processing including a plurality of frames in the compression-encoded video and/or audio data.

10. A disc storage medium storing, in a predetermined region, file management data inclusive of position data of a program management file that manages the stream of a plurality of contents stored in a compression-encoded form by using a variable-length code, wherein as said file management data, there are stored position data of an intraframe encoding video, the number of blocks of the intraframe encoding video, as well as position data of a start frame and position data of an end frame in a unit of a predetermined processing including a plurality of frames.

11. A disc storage medium according to claim 10, wherein said contents are compressed and encoded in compliance with MPEG2, said unit of the predetermined processing including the plurality of frames is the unit of GOP, and said intraframe encoding video is an I-Picture.

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12. A disc storage medium according to claim 10, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file storing the video and/or audio data is to be erased or combined and when there exists another program management file making reference to said data file, the erasure or the combination is inhibited unless said another program management file is operated first.

13. A disc storage medium according to claim 10, wherein said file management data include a last play file representing the position of the video or audio data file of which the access has ended last for each of the stored contents.

14. A disc storage medium according to claim 10, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

15. A disc storage medium according to claim 12, wherein said file management data include a last play file representing the position of the video or audio data file of which the access has ended last for each of the stored contents.

16. A disc storage medium according to claim 12, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

17. A disc storage medium according to claim 15, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

18. A playback method for reading file management data stored in a predetermined region of the disc storage medium when the disc storage medium is inserted in a disc playback device; wherein

the disc storage medium stores the position data of an intraframe encoding video and the number of blocks of the intraframe encoding video in a unit of a predetermined processing including a plurality of frames; and

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the intraframe encoding video corresponding to a desired content are successively picked up and reproduced according to a predetermined order for every unit of the predetermined processing according to the input of operation.

19. A disc playback device having means for reading file management data stored in a predetermined region of a disc storage medium when the disc storage medium is inserted in a disc playback device, comprising:

means for recording position data of an intraframe encoding video and the number of blocks of the intraframe encoding video in a unit of a predetermined processing including a plurality of frames; and

means for successively picking up and reproduce the intraframe encoding video corresponding to a desired content according to a predetermined order for every unit of the predetermined processing according to the input of operation.

20. A method of recording video in a disc storage medium having a file management data region which is a particular region separate from the region for recording the data of contents by picking up, as map data, the position data in a unit of a predetermined processing including a plurality of compression-encoded frames at the time of recording the contents in the disc storage medium in a compression-encoded manner, wherein

the position data of an intraframe encoding video and the number of blocks thereof are picked up as map data in a unit of a predetermined processing.

21. A method of recording video in a disc storage medium according to claim 20, wherein said contents are compressed and encoded in compliance with MPEG2, said unit of the predetermined processing including the plurality of frames is the unit of GOP, and said intraframe encoding video is an I-Picture.

22. A device for recording video in a disc storage medium having a file management data region which is a particular region separate from the region for recording the data of contents by picking up, as map data, the position data in a unit of a predetermined processing including a plurality of compression-encoded frames at the time of recording the contents in the disc storage medium in a

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compression-encoded manner, wherein

said apparatus further includes means for picking up the position data of an intraframe encoding video and the number of blocks thereof as map data in a unit of the predetermined processing.

23. A device for recording video in a disc storage medium according to claim 22, wherein said contents are compressed and encoded in compliance with MPEG2, said unit of the predetermined processing including the plurality of frames is the unit of GOP, and said intraframe encoding video is an I-Picture.

24. A method of editing video by recording in a disc storage medium, as a map file, position data of the compression-encoded video and audio data in a unit of a predetermined processing including a plurality of frames, editing a file of the recorded video and audio data in the unit of the predetermined processing, storing the file in a program management file so as to specify the positions of the video data and audio data having continuing results of editing, and storing the program management file in a region for storing the file management data that manage the file of the disc storage medium, wherein

the position data of the intraframe encoding video and the number of blocks thereof are recorded as a map file in the disc storage medium in the unit of the predetermined processing for compression-encoding the stored contents, the intraframe encoding video are successively picked up and reproduced for each of the units of the predetermined processing according to a predetermined order to form a quickly fed video, and the editing is effected while making a reference to the quickly fed video.

25. A method of editing video according to claim 24, wherein the compression-encoding is effected in compliance with MPEG2, said unit of the predetermined processing including the plurality of frames is the unit of GOP, and said intraframe encoding video is an I-Picture.

26. A device for editing video recorded in a disc storage medium, comprising:

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means for compressing and encoding the content of video to be stored in the disc storage medium;

means for storing the encoded video and audio data in the disc storage medium as data file for each of the contents;

means for preparing a map file of position data of the recorded video and audio data;

means for reading and decoding the recorded data file;

memory means for storing, as file management data, a program management file that manages the stream of data; and

input means for inputting an editing instruction;

wherein the program management file stores the result of the data file erased or combined by an operation input from the input means in a unit of a predetermined processing including a plurality of frames of the data file; and

means is provided for picking up and reproduce the encoded video in the recorded frames according to a predetermined order in compliance with the input of operation.

27. A device for editing video recorded in a disc storage medium according to claim 26, wherein said contents are compressed and encoded in compliance with MPEG2, said unit of the predetermined processing including the plurality of frames is the unit of GOP, and said intraframe encoding video is an I-Picture.

28. A disc storage medium storing the video and/or audio data as a data file compression-encoded by using a variable-length code; wherein

the disc storage medium stores file management data in a particular region that has been secured in advance; and

the particular region includes position data of a program management file that manages the stream of the compression-encoded video and/or audio data.

29. A disc storage medium according to claim 28, wherein the file management data of contents stored in a plurality of disc storage media held in a

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cartridge, are recorded in the particular region that has been secured in advance in the disc storage medium.

30. A disc storage medium according to claim 28, wherein the data file of video and/or audio data stored in the disc storage media are constituted by a data file (MVF) in which the stream of the compression-encoded video and/or audio data is stored in a unit of a block, and a map file (MAP) that includes address data for managing the above data file.

31. A disc storage medium according to claim 28, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file storing the video and/or audio data is to be erased or combined and when there exists another program management file making reference to said data file, the erasure or the combination is inhibited unless said another program management file is operated first.

32. A disc storage medium according to claim 28, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file of the video and/or audio is to be erased or combined and when there exists another program management file making reference to said data file, the position data that is changed by the erasure or the combination is automatically updated and said another program management file is automatically constituted again.

33. A disc storage medium according to claim 28, wherein said file management data include a last play file representing the position of the video or audio data file of which the access has ended last for each of the stored contents.

34. A disc storage medium storing a plurality of contents as a data file compression-encoded by using a variable-length code; wherein

the disc storage medium stores file management data in a particular region that has been secured in advance; and

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the file management data includes titles of the plurality of contents and position data showing where outline data of the contents corresponding to the titles are stored.

a 35. A disc storage medium according to claim 34, wherein file management data of contents stored in a plurality of disc storage media held in a cartridge, are recorded in the particular region that has been secured in advance in the disc storage medium.

36. A disc storage medium according to claim 34, wherein the data file of video and/or audio data stored in the disc storage media are constituted by a data file (MVF) in which the stream of the compression-encoded video and/or audio data is stored in a unit of a block, and a map file (MAP) that includes address data for managing the above data file.

37. A disc storage medium according to claim 34, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file storing the video and/or audio data is to be erased or combined and when there exists another program management file making reference to said data file, the erasure or the combination is inhibited unless said another program management file is operated first.

38. A disc storage medium according to claim 34, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file of the video and/or audio is to be erased or combined and when there exists another program management file making reference to said data file, the position data that is changed by the erasure or the combination is automatically updated and said another program management file is automatically constituted again.

39. A disc storage medium according to claim 34, wherein said file management data include a last play file representing the position of the video or

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audio data file of which the access has ended last for each of the stored contents.

40. A playback method wherein, when a disc storage medium is inserted in a disc playback device, file management data are read out from a particular region that has been secured in advance in the disc storage medium, an outline data file corresponding to the contents is read out together with the titles of the contents that have been stored in the file management data, and the titles of the contents and the outline data are simultaneously displayed.

41. A disc playback device comprising:

means which, when a disc storage medium is inserted in a disc playback device, reads out file management data from a particular region that has been secured in advance in the disc storage medium; and

means which reads out an outline data file corresponding to the contents together with the titles of the contents in the file management data that are read out, and simultaneously displays the titles of the contents and the outline data.

42. A disc playback device according to claim 41, further comprising:

means for mounting, at one time, a plurality of pieces of disc storage media held in a cartridge;

recording means for recording, in a first disc storage medium at one time, titles of a plurality of contents stored in the plurality of disc storage media held in the cartridge and the outline data; and

means for simultaneously displaying the titles of the contents and the outline data stored by the recording means.

43. A method of recording, in a disc storage medium, a data file of video and/or audio contents in a compression-encoded form by using a variable-length code, wherein:

the disc storage medium is provided with a file management data region which is a particular region that has been secured in advance and is separate from the region where the data file is stored;

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titles of the recorded contents are recorded in the file management data region, and the recorded contents are stored as outline data; and

the position data of outline data corresponding to the titles of the contents are stored in the file management data region.

44. A method of recording, in a disc storage medium, a data file of video and/or audio contents in a compression-encoded form by using a variable-length code, wherein:

the disc storage medium is provided with a file management data region which is a particular region that has been secured in advance and is separate from the region where the data file is stored;

titles of the recorded contents are recorded in the file management data region, and the content of the recorded contents are formed in an outline data file; and

the position data in the outline data file corresponding to the titles of the contents are stored in the file management data region.

45. A recording device having recording means for recording, in a disc storage medium, a data file of video and/or audio contents in a compression-encoded form by using a variable-length code, wherein:

the disc storage medium is provided with a file management data region which is a particular region that has been secured in advance and is separate from the region where the data file is stored; and

the recording means includes first means for storing titles of the recorded contents in the file management data region and for storing the recorded contents as outline data, and second means for storing position data of outline data corresponding to the titles of the contents in the file management data region.

46. A recording device having recording means for recording, in a disc storage medium, a data file of video and/or audio contents in a compression-encoded form by using a variable-length code, wherein:

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the disc storage medium is provided with a file management data region which is a particular region that has been secured in advance and is separate from the region where the data file is stored; and

the recording means includes means for recording titles of the recorded contents in the file management data region and for forming the content of the recorded contents in an outline data file, and means for storing, in the file management data region, the position data of the contents corresponding to the titles of the contents in the outline data file.

47. A method of editing stored data, wherein:

as a map file, there are stored in a disc storage medium position data and the number of blocks in a unit of a predetermined processing including a plurality of frames of the compression-encoded video and/or audio data, the number of blocks of the intraframe encoding video in the unit of the predetermined processing, and the position data of a start frame and the position data of an end frame in the unit of the predetermined processing;

a data file of the recorded video and/or audio is stored in a program management file in any order without being edited, so as to specify the position of the video and/or audio data; and

the program management file is stored in a region for storing the file management data that manage the file of the disc storage medium.

48. A method of editing stored data, wherein:

as a map file, there are stored in a disc storage medium position data and the number of blocks in a unit of a predetermined processing including a plurality of frames of the compression-encoded video and/or audio data, and the position data of a start frame and the position data of an end frame in the unit of the predetermined processing;

a file of the recorded video and/or audio data is erased in the unit of the predetermined processing;

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the data file is stored in a program management file so as to specify the position of the video and/or audio data, so that playback can be continuously effected; and

the program management file is stored in a region for storing the file management data that manage the file of the disc storage medium.

a 49. A method of editing the stored data according to claim 48, wherein a correlation management file is provided to show the file of video and/or audio data referred to by the program management file, and when a reference is made by another program management file to the file of video and/or audio data that is to be edited inclusive of erasing the stored data, the editing is inhibited unless said another program management file is edited first.

50. A method of editing the stored data according to claim 48, wherein a correlation management file is provided to show the file of video and/or audio data referred to by the program management file, and when a reference is made by another program management file to the file of video and/or audio data that is to be edited inclusive of erasing the stored data, the position data that is changed by erasing or combination is automatically updated and said another program management file is automatically constituted again.

51. A device for editing record in a disc storage medium, comprising:
means for compressing and encoding video and/or audio data to be stored in the disc storage medium;

means for storing the encoded video and/or audio data as data file for each of the contents;

means for preparing a map file storing the position data and the number of blocks in a unit of a predetermined processing including a plurality of frames of the stored video and/or audio data, and the number of blocks of the intraframe encoding video in the unit of the predetermined processing;

means for reading and decoding the recorded data file;

memory means for storing, as file management data, a program

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management file that manages the stream of the data file; and

input means for inputting an editing instruction;

wherein the program management file stores the result of erasing or combining the data file by an operation input from the input means in the unit of the predetermined processing of the data file.

52. A disc storage medium storing, in a predetermined region, file management data inclusive of position data of a program management file that manages the stream of a plurality of contents stored in a compression-encoded form by using a variable-length code, wherein said file management data include recording position data of the audio data corresponding to the video data, and the region storing the audio data is sectionalized in a unit of an ECC (error correction code) block.

53. A disc storage medium according to claim 52, wherein the region storing the audio data is provided for every unit of the predetermined processing of the compression-encoded video data.

54. A disc storage medium according to claim 52, wherein the region storing the audio data is divided into a plurality of regions.

55. A disc storage medium according to claim 52, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file storing the video and/or audio data is to be erased or combined and when there exists another program management file making reference to said data file, the erasure or the combination is inhibited unless said another program management file is operated first.

56. A disc storage medium according to claim 52, wherein said file management data include a last play file representing the position of the video or audio data file of which the access has ended last for each of the stored contents.

57. A disc storage medium according to claim 52, wherein said file management data include an outline data file representing the titles and contents

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of each of the stored contents.

58. A disc storage medium storing video and/or audio data as a data file compression-encoded by using a variable-length code; wherein

the file of video and/or audio data stored in the disc storage medium is constituted by a data file storing the stream of compression-encoded video and/or audio data in a unit of a block, and a map file that includes address data for managing the data file; and

the map file includes position data and the number of blocks in a unit of a predetermined processing including a plurality of frames in the compression-encoded video and/or audio data and position data and the number of blocks of the compression-encoded audio data in a unit of the predetermined processing .

59. A disc storage medium according to claim 58, wherein the region storing the audio data is provided for every unit of the predetermined processing of the compression-encoded video data.

60. A disc storage medium according to claim 58, wherein the region storing the audio data is divided into a plurality of regions.

61. A disc storage medium according to claim 58, wherein said file management data includes a correlation management file describing a relationship of which data file is referred to by which program management file, and when the data file storing the video and/or audio data is to be erased or combined and when there exists another program management file making reference to said data file, the erasure or the combination is inhibited unless said another program management file is operated first.

62. A disc storage medium according to claim 58, wherein said file management data include a last play file representing the position of the video or audio data file of which the access has ended last for each of the stored contents.

63. A disc storage medium according to claim 58, wherein said file management data include an outline data file representing the titles and contents of each of the stored contents.

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64. A playback method for reading file management data stored in a predetermined region that has been secured in advance in a disc storage medium when the disc storage medium is inserted in a disc playback device; wherein the disc storage medium stores the video data and the audio data in different regions;

the file management data include data related to the data stored in the different regions;

the file management data are read out when the disc storage medium is inserted in the disc playback device; and

the desired video data and audio data are rearranged so as to be reproduced in synchronism with each other.

65. A disc playback device having means for reading out file management data stored in a predetermined region that has been secured in advance in a disc storage medium when the disc storage medium is inserted in a disc playback device; wherein

the disc storage medium stores the video data and the audio data in different regions;

the file management data include data related to the data stored in the different regions; and

means is provided for reading out the file management data when the disc storage medium is inserted in the disc playback device; and

means is provided for rearranging the desired video data and audio data so as to be reproduced in synchronism with each other according to the file management data read out by the reading means.

66. A method of recording video in a disc storage medium having a file management data region which is a particular region separate from the region for recording the data of contents by picking up, as map data, the position data in a unit of a predetermined processing including a plurality of compression-encoded frames at the time of recording the contents in the disc storage medium in a

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compression-encoded manner, wherein:

the video data and the audio data are stored in different regions in the disc storage medium; and

the file management data include data related to the data stored in the different regions.

67. A method of editing stored video by recording in a disc storage medium, as a map file, position data of the compression-encoded video and audio data in a unit of a predetermined processing including a plurality of frames, editing a file of the recorded video and audio data in the unit of the predetermined processing, storing the file in a program management file so as to specify the positions of the video data and audio data having continuing results of editing, and storing the program management file in a region for storing the file management data that manage the file of the disc storage medium, wherein:

a region for storing the audio data corresponding to the processed video data is provided for every unit of the predetermined processing;

position data of the audio data stored in the region for storing the audio data are stored in the program management file; and

the audio data stored in the region for storing the audio data are updated or added.

68. A method of editing the stored video according to claim 67, wherein the region for storing the audio data is provided with a free region for adding new audio data.

69. A device for editing video recorded in a disc storage medium, comprising:

means for compressing and encoding the content of video to be stored in a disc storage medium;

means for storing the encoded video and audio data as a data file in the disc storage medium for each of the contents;

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means for preparing a map file of position data of the recorded video data and audio data;

means for reading and decoding the recorded data file;

memory means for storing, as file management data, a program management file that manages the stream of data file; and

input means for inputting an editing instruction;

wherein the program management file stores the result of the data file erased or combined by an operation input from the input means in a unit of a predetermined processing including a plurality of frames of the data file.

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